



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

Name(s) Frankie Ziman	Project Number J1141
Project Title How Effective Is Your Mouthwash?	
Abstract Objectives/Goals The objective of this project was to find out which mouthwash would be most effective for the least amount of money. Listerine Cool Mint, Listerine Less Intense Natural Citrus, Mint Scope, Mint Cepacol, Listerine Cool Mint PoketPaks, and Listerine Less Intense Natural Citrus PoketPaks are the six mouthwashes that were tested. Methods/Materials Two trials were conducted. Five different dilutions of water to mouthwash were created. One milliliter of E. Coli Bacteria was added to each culture tube. The PoketPaks were dissolved into water before the water for the dilution was added. The culture tubes were then put into an incubator set at 37 degrees Celsius for 24 hours. After that they were put into a spectrophotometer to test for the amount of bacteria absorbance. Results On an average of all of the dilutions and trials, Mint Scope only had .0332 absorbance units, as compared to the average control, which had 2.1933 absorbance units. Mint Scope also sold for the lowest cost at \$0.13 per ounce. Cepacol killed the second largest amount of bacteria. The third best mouthwash was Cool Mint Listerine and the fourth best was Less Intense Natural Citrus Listerine. Both of the Listerine PoketPaks did the worst of all the products tested. Conclusions/Discussion Mint Scope is the preferable mouthwash being the most effective and selling for the lowest cost. Mint Cepacol could be used as a second choice, but the rest of the mouthwashes should not be used because they are not effective and they are sold at a higher cost.	
Summary Statement Which mouthwash out of Listerine Cool Mint, Listerine Less Intense Natural Citrus, Mint Scope, Mint Cepacol, Listerine Cool Mint PoketPaks, Listerine Less Intense Natural Citrus PoketPaks is most effective at the least cost?	
Help Received Mother helped with board; Ms. Reynolds corrected papers; Dr. Rubinoff was interviewed; Used equipment in the Cravatt Lab at the Scripps Research Institute under the supervision of Dr. Cravatt.	